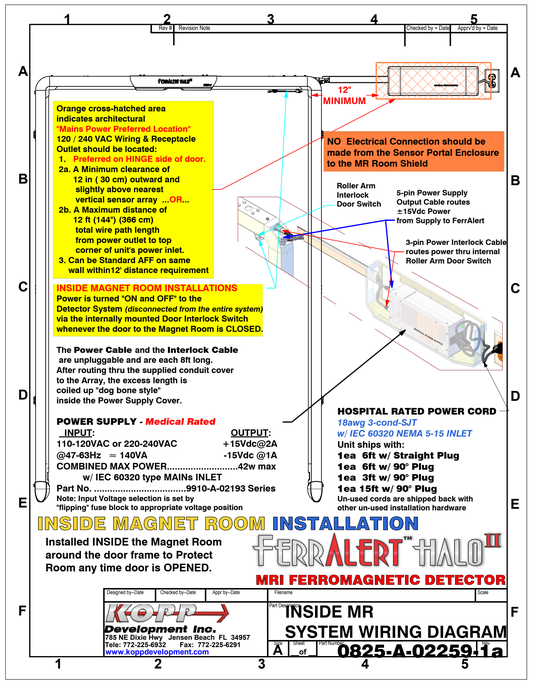


KOPP Development Inc.

MRI FERROMAGNETIC DETECTION SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Ferromagnetic Detection System for staff/patient screening at MRI suite.

1.2 SYSTEM DESCRIPTION

A. Design Requirements

1. Magnetic Field: Provide ferromagnetic detection instruments capable of functioning without producing any static or time varying magnetic field.
2. Alarms: Provide ferromagnetic detection instruments with auditory and visual alarms.
   a. *The ferromagnetic detector will react only to metals attracted to a DC magnetic field.*
   b. *The detector Alarm lights will show location of the ferromagnetic threat.*
3. Mounting Requirements: Ferromagnetic detection equipment can be mounted internal *(for out-swing doors)* or external *(for in-swing doors)* to the MRI room.
4. Alarm Visibility: Visual pre-warning alarms, location indicators and bar graphs must be visible simultaneously both inside and outside the magnet room

B. Performance Requirements:

1. Alarm audio and visual signals activate upon detection of ferromagnetic materials of a mass, orientation and distance as prescribed by the specifications of the individual instrument.
   a. *Visible Alarm: Provide visual alarm with dual bar graph displays that change in real time without activation of the audible alarm in order to differentiate the degree of ferromagnetic material detected prior to entering the detector. Provide escalating visual advance warning.*
   b. *Audible Alarm: Provide audible alarm triggered by the interruption of an optically coupled beam between the two sides of the detector portal.*
   c. *Threat Location indicator: Visually pinpoint the location of the ferromagnetic object to within 1 of 18 zones within the portal*
2. Non-ferromagnetic materials which do not come into contact with the detector will not activate the alarms.
3. Provide the ferromagnetic detector the ability to manually increase or decrease sensitivity levels of detection.
4. Provide the ferromagnetic detector with the ability to be configurable for differing width coverage.

1.3 ACTION SUBMITTALS

A. Product Data: Manufacturer's data sheets on all products, including:

1. Site preparation instructions and recommendations.
2. Design precautions for mitigation of interference sources.

B. Shop Drawings:

1. Dimensional Drawings: Ferromagnetic Detector, Power Supply & Accessories showing layout, profiles and product components, including anchorage *(if required)*.
2. Wiring Diagrams: Showing requirements for electrical power, routing of power, signal, and control wiring.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Field Installation Quality-Assurance Reports.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Operation Manual and maintenance data for installed products.

B. Warranty: Warranty documents specified herein.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Manufacturer Qualifications: Manufacturer capable of providing field installation services for ferromagnetic detection portals during start-up operations.

C. Source Limitations: Obtain ferromagnetic detection system from single source from single manufacturer.

D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

E. Pre-installation Conference: Conduct conference at Project site.

1.7 DELIVERY, STORAGE & HANDLING

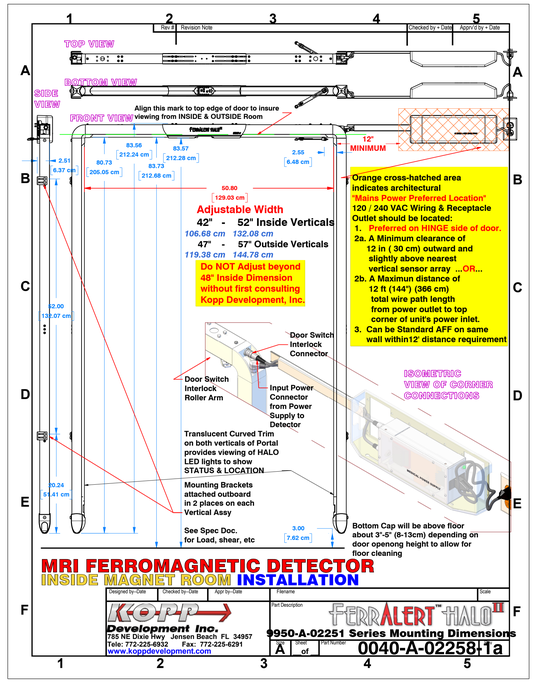
A. Store products in manufacturer's unopened packaging prior to installation.

B. Dispose of waste crating, packaging and shipping materials following manufacturer installation.

1.8 PROJECT CONDITIONS

A. Environmental Conditions: Maintain temperature, humidity, and ventilation within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's limits.

B. Verify project conditions: Notify the Architect if such conditions are not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.



PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design:

- **Provide Wall-Mounted Portal FerrAlert™ HALO II by Kopp Development Inc.**

2.2 MRI FERROMAGNETIC DETECTION SYSTEM

A. Ferromagnetic Detection Systems:

- **Provide system consisting of a portal containing 2 vertical sections.**
- **The vertical sections have 12 green NORMAL indicators, 48 red ferromagnetic threat location indicators.**
- **The connecting crossbar contains 2 magnitude indicator bar graphs, a pre-alarm beacon and audible alarm.**
- **The portal is powered by a SELV (safe extra low voltage) power supply interconnected via a low voltage cable either surface mounted or routed within electrical rough-in at either side and adjacent to the portal or doorway to be guarded and a power supply which is to be located above the dropped ceiling if local electrical codes permit or surface mounted under the cover provided by the manufacturer Kopp Development Inc.**

1. Locations: Refer to drawings for equipment location(s), including installation heights, and quantity.
2. Finishes: Standard finish is pearl white.
3. Operation Mode: Portal is generally located on the door frame between zone III and zone IV (magnet room). If a large ferromagnetic object approaches the ferromagnetic detector portal, the entire array of 48 red alarm lights flash well ahead of the entrance to the detector portal. If a moderate size object approaches the detector portal, the yellow pre-warning beacon located in the crossbar will illuminate also ahead of the entrance to the portal. Should a ferromagnetic object of sufficient mass continue into the portal, all of the 48 red lights will flash momentarily. The lights will converge on the location of the ferromagnetic threat. At the same time as the red lights are flashing an audio alarm will sound.

B. Provide manufacturer's standard installation kit. Kit to consist of the following:

1. 1 each: Power supply *(Input 240VAC/120VAC, Output +/-15V DC)* w/ power cords
2. 1 each: door switch kit *(for out-swing door installations)*
3. 1 each: hardware and bracket kit
4. 1 each: Operation manual and other installation documents

PART 3 - EXECUTION

3.1 EXAMINATION

A. Site Verification of Conditions:

- **Verify substrate and worksite conditions meet or exceed manufacturer's requirements for installation.**
- **A Request for installation (RFI) will be executed.**

3.2 PREPARATION

A. Clean substrates thoroughly prior to installation.

B. Conduct the pre-installation steps in accordance with the manufacturers written instructions.

3.3 INSTALLATION

A. Installation to occur after all wet work is complete and staff is available for training.

B. Approved installer to install wall mounted ferromagnetic detection systems in accordance with manufacturer's written instructions.

C. Install secure, plumb, level and true to line free of rack in its permanent location.

D. Detector is to remain powered off until training day.

3.4 FIELD QUALITY CONTROL

A. Functionality and performance testing will be conducted by the manufacturer approved installer according to manufacturer's procedures.

B. Prepare test and inspection reports as follows.

1. A three stage process consisting of installation, verification/testing and staff training by the manufacturer-approved installer.

3.5 CLEANING

A. Cleaning:

- **Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products.**
- **Clean all installed products in accordance with manufacturer's instructions.**
- **Remove and legally dispose of construction debris from project site.**

3.6 PROTECTION

A. Protect installed products including wiring and devices until Owner takes possession.

END OF SECTION

Revisions:	Date
REV 01 – VA REQUESTED CHANGES	12/31/14
100% Construction Documents	08/10/11
95% Construction Documents	05/12/11
50% Schematic Design	01/24/11

CONSULTANTS:

Structural Engineer: Bob D. Campbell & Co. 4338 Belleview Kansas City, MO 64111

MEP Engineer: TME, Inc. 2039 N. Green Acres Road Fayetteville, AR 72703

Associate Architect: SPUR Design One Santa Fe Plaza, Suite 101 Oklahoma City, OK 73102

Cost Estimating: CMR 5201 Johnson Dr., Suite 330 Mission, KS 66205

STATE OF MISSOURI ROBERT JUNG NUMBER A-2003021848 ARCHITECT

ARCHITECT: RAD RADIOLOGY PLANNING
RAD-Planning 802 Broadway 5th Floor Kansas City, MO 64105
www.RAD-Planning.com 816.472.7722

Drawing Title: FerrAlert Halo II Detector Info

Approved: Project Director

Project Title: SITE PREP FOR MAGNETIC RESONANCE IMAGING EQUIPMENT

Location: VETERANS HEALTHCARE SYSTEM OF THE OZARKS 1100 N. COLLEGE AVE, FAYETTEVILLE, AR 72703

Date: August 10, 2011 | Checked: XX | Drawn: SB

Project Number: 564-10-101

Building Number: 2

Drawing Number: AS401

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231

Date: Wed, Jan 7, 2015
Time: 12:40:46 PM
File name: 10106 150106 REV 01 VAMC FAYETTEVILLE MRI v2014.vwx

FULLY SPRINKLERED — REV 01 VA REQUESTED CHANGES